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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,677	06/05/2006	Christine Terreau	71,049-004	1745

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HOWARD & HOWARD ATTORNEYS PLLC
450 West Fourth Street
Royal Oak, MI 48067

EXAMINER	
MOWLA, GOLAM	

ART UNIT	PAPER NUMBER
1723	

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10/14/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/563,677	TERREAU ET AL.	
	Examiner	Art Unit	
	GOLAM MOWLA	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 July 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-4,6,8,12-18,20-22,24-27,31-36 and 38-40* is/are pending in the application.

4a) Of the above claim(s) *18,20-22,24-27,35 and 39* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-4,6,8,12-17,31-34,36,38 and 39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *07/30/2010*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

FINAL ACTION

Response to Amendment

1. This action is in response to Applicant's reply submitted on 07/30/2010 in response to Office Action dated 03/31/2010. However, Applicant's amendment of 07/30/2010 does not place the Application in condition for allowance.

2. Claims 2-4, 6, 8, 12-18, 20-22, 24-27, 31-36 and 38-40 are currently pending. Applicant has amended claims 14, 18, 20-22, 24-27 and 32-36, cancelled claims 1, 5, 7, 9-11, 19, 23, 28-30 and 37, and added new claims 39-40. Claims 18, 20-22, 24-27 and 35 are withdrawn from consideration as being part of non-elected invention. Claim 40 depends on withdrawn claim 18, and therefore also withdrawn from consideration.

Status of the Rejections

3. The rejection of claims 2-4, 6, 8, 12-17, 31-34 and 36 from the Office Action dated 03/31/2010 are withdrawn in view of Applicant's amendment submitted on 07/30/2010. However, upon further consideration, a new ground of rejection is presented below for the pending claims 2-4, 6, 8, 12-17, 31-34, 36 and 38-40.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 2-4, 6, 8, 12-17, 31-34, 36 and 38-39 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 36 recites the limitation "wherein said first and second liquid diorganopolysiloxanes, silicone resins, cross-linking agents, and hydrosilylation catalysts may be the same or different from each other, respectively" in lines 31-32, which is not supported by the original disclosure as filed. There is no disclosure of "said first and second liquid diorganopolysiloxanes, silicone resins, cross-linking agents, and hydrosilylation catalysts may be the same or different from each other, respectively" being specifically contemplated in the specification as originally filed.

Claim 39 recites the limitation "… free of ethylene-vinyl acetate (EVA) copolymer" in lines 1-2, which is not supported by the original disclosure as filed. There is no disclosure of "… free of ethylene-vinyl acetate (EVA) copolymer" being specifically contemplated in the specification as originally filed. Applicant contends that paragraphs [0011-0014] and [0041] of the original disclosure describes replacement and thus elimination of EVA. However, the above mentioned paragraphs only show the use of EVA increases the manufacturing cost. It does not specifically contemplate complete elimination of EVA in order to make the solar cell module "free of ethylene-vinyl acetate (EVA) copolymer."

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 2-4, 6, 8, 12-17, 31-34, 36 and 38-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 36 is indefinite because it recites the limitation "wherein said first and second liquid diorganopolysiloxanes, silicone resins, cross-linking agents, and hydrosilylation catalysts may be the same or different from each other, respectively" in lines 31-32. The fist and second cross-linking agents can not be the same because the ratio of the number of moles of silicon-bonded hydrogen to the total number of moles of silicon-bonded alkenyl groups is not the same. Clarification is requested.

Claim Rejections - 35 USC § 103

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 2-4, 6, 8, 12-17, 31-34, 36 and 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiotsuka et al. (US 6,175,075) in view of Stein (US 5,569,689).

Regarding claims 6, 12 and 36, Shiotsuka discloses a solar cell module (see fig. 1b and 12:33-54) comprising a rigid or flexible superstrate (protective film 123) (18:1-49), a silicone adhesive (surface side filler resin 122 which comprises silicone) (15:55-16:10), and one or more solar cells (photovoltaic element string 121 having a plurality of photovoltaic elements) (9:46-47) disposed on said adhesive (122).

Shiotsuka further teaches that the silicone adhesive (122) is utilized in order provide adhesion between the superstrate (123) and the solar cell (121). However, the reference is silent

as to whether the silicone adhesive (122) has a viscosity of from 100-2000 mPa.s at 25°C and comprises a composition that is formed from: (Ai) 100 parts by weight of a first liquid diorganopolysiloxane having at least two Si-alkenyl groups per molecule, (Bi) 20 to 40 parts by weight of a first silicone resin containing at least two alkenyl groups, (Ci) a first cross-linking agent in the form of a polyorganosiloxane having at least two silicon-bonded hydrogen atoms per molecule, in an amount such that the ratio of the number of moles of silicon-bonded hydrogen to the total number of moles of silicon-bonded alkenyl groups in component (Ai) is <1:1, and (Di) a first hydrosilylation catalyst wherein the amount of metal in said hydrosilylation catalyst is from 0.01 to 500 parts by weight per 1,000,000 parts by weight of component (Ai).

Stein teaches a silicone adhesive composition having improved adhesivity (1:22-33 and 2:23-33). Stein further teaches that a composition that is formed from: (Ai) 100 parts by weight of a liquid diorganopolysiloxane having at least two Si-alkenyl groups per molecule (2:55-60), (Bi) up to 100 parts by weight of a silicone resin containing at least two alkenyl groups (3:4-14), (Ci) a cross-linking agent in the form of a polyorganosiloxane having at least two silicon-bonded hydrogen atoms per molecule, in an amount such that the ratio of the number of moles of silicon-bonded hydrogen to the total number of moles of silicon-bonded alkenyl groups in component (Ai) is from 0.4:1 to 2:1 (3:15-45), and (Di) a hydrosilylation catalyst wherein the amount of metal in said hydrosilylation catalyst is from 0.01 to 500 parts by weight per 1,000,000 parts by weight of component (Ai) (3:56-4:10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the silicone adhesive composition of Stein in the solar cell module of

Shiotsuka in order to allow for sufficient adhesion between the superstrate (123) and the solar cell (121).

The claimed ranges of the first silicone resin and the ratio of the number of moles of silicon-bonded hydrogen to the total number of moles of silicon-bonded alkenyl groups in component (Ai) overlap or lies within the disclosed range. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists (MPEP § 2144.05, In re Wertheim). In an alternative, it would have been obvious to one of ordinary skill in the art at the time of the invention to have performed routine experimentation to determine the optimum weight fraction of the first silicone resin, and the ratio of the number of moles of silicon-bonded hydrogen to the total number of moles of silicon-bonded alkenyl groups in component (Ai) by routine experimentation such that the adhesivity of the silicone adhesive composition is optimized. In the case where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation (MPEP § 2144.05 IIA, *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)).

Since the silicone adhesive composition of Shiotsuka in view of Stein as modified has the same composition as the instant claim, the silicone adhesive composition of Shiotsuka in view of Stein as modified must inherently have a viscosity of from 100-2000 mPa.s at 25°C. If different results are achieved, it must be due to the limitations that are not currently claimed. It is also noted that claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable (*In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977)) (MPEP §2112).

Shiotsuka further discloses a silicone encapsulant (back side filler resin 124) (19:1-34) disposed on said one ore more solar cells (121). Shiotsuka further teaches that the silicone encapsulant (124) is utilized in order provide adhesion between the substrate (126) and the solar cell (121). However, the reference is silent as to whether the silicone encapsulant (124) comprises a liquid silicone encapsulant composition that is formed from: (A) 100 parts by weight of a second liquid diorganopolysiloxane having at least two Si-alkenyl groups per molecule, (B) 20 to 40 parts by weight of a second silicone resin containing at least two alkenyl groups, (C) a second cross-linking agent in the form of a polyorganosiloxane having at least two silicon-bonded hydrogen atoms per molecule, in an amount such that the ratio of the number of moles of silicon-bonded hydrogen to the total number of moles of silicon-bonded alkenyl groups in component (A) is > 1:1 to 5:1, and (D) a second hydrosilylation catalyst wherein the amount of metal in said hydrosilylation catalyst is from 0.01 to 500 parts by weight per 1,000,000 parts by weight of component (A).

Stein teaches a silicone encapsulant composition having improved adhesivity (1:22-33 and 2:23-33). Stein further teaches that a composition that is formed from: (A) 100 parts by weight of a liquid diorganopolysiloxane having at least two Si-alkenyl groups per molecule (2:55-60), (Bi) up to 100 parts by weight of a silicone resin containing at least two alkenyl groups (3:4-14), (Ci) a cross-linking agent in the form of a polyorganosiloxane having at least two silicon-bonded hydrogen atoms per molecule, in an amount such that the ratio of the number of moles of silicon-bonded hydrogen to the total number of moles of silicon-bonded alkenyl groups in component (Ai) is from 0.4:1 to 2:1 (3:15-45), and (Di) a hydrosilylation catalyst

wherein the amount of metal in said hydrosilylation catalyst is from 0.01 to 500 parts by weight per 1,000,000 parts by weight of component (Ai) (3:56-4:10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the silicone encapsulant composition of Stein in the solar cell module of Shiotsuka in order to allow for sufficient adhesion between the substrate (126) and the solar cell (121).

The claimed ranges of the second silicone resin and the ratio of the number of moles of silicon-bonded hydrogen to the total number of moles of silicon-bonded alkenyl groups in component (A) overlap or lies within the disclosed range. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists (MPEP § 2144.05, In re Wertheim). In an alternative, it would have been obvious to one of ordinary skill in the art at the time of the invention to have performed routine experimentation to determine the optimum weight fraction of the second silicone resin, and the ratio of the number of moles of silicon-bonded hydrogen to the total number of moles of silicon-bonded alkenyl groups in component (A) by routine experimentation such that the adhesivity of the silicone encapsulant composition is optimized. In the case where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation (MPEP § 2144.05 IIA, *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)).

Hence, Shiotsuka in view of Stein discloses that said first and second liquid diorganopolysiloxanes, silicone resins, cross-linking agents, and hydrosilylation catalysts may be the same or different from each other, respectively.

Regarding claims 2-4 and 31, the reference further discloses that said one or more solar cells (121) is either a wafer or a thin film made from a amorphous silicon, polycrystalline silicon, gallium arsenide, copper indium diselenide or cadmium telluride (13:45-57).

Regarding claim 14, Shiotsuka in view of Stein further discloses the first and second silicon resins contain up to 100 parts weight. Although the reference is silent as to whether said liquid silicone encapsulant composition comprises a resin fraction of between 30% and 50% by weight and said silicone adhesive composition comprises a resin fraction of between 20% and 30% by weight, it would have been obvious to one of ordinary skill in the art at the time of the invention to have performed routine experimentation to determine the optimum weight fraction of the second silicone resin such that the adhesivity of the silicone encapsulant composition is optimized. In the case where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation (MPEP § 2144.05 IIA, *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)).

Regarding claims 15-16, 32-33 and 38, the silicone adhesive/encapsulant composition of Shiotsuka in view of Stein as modified has the same composition as the instant claim, and therefore, the silicone encapsulant/adhesive composition of Shiotsuka in view of Stein as modified must inherently cure without releasing volatiles and exhibits a light transmission substantially equivalent to glass. If different results are achieved, it must be due to the limitations that are not currently claimed. It is also noted that claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable (*In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977)) (MPEP §2112).

Regarding claims 8, 13, 17 and 34, Shiotsuka in view of Stein further discloses one or more solar cells (121) is pre-treated prior to adhesion to the silicone encapsulant/adhesive composition (since the photovoltaic string is already made and interposed between silicone encapsulant and silicone adhesive, it must be pre-made/treated), and the silicone encapsulant/adhesive composition additionally comprises one or more adhesive promoter(s) and/or an anti-soiling agent(s) and/or cure inhibitor (s) and/or a silane of the formula $(R^1O)^3SiR^2$, wherein R^1 is an alkyl group comprising 1 to 6 carbon atoms, R^2 is selected from the group of an alkoxy group comprising 1 to 6 carbon atoms, an alkyl group comprising 1 to 6 carbon atoms, an alkenyl group comprising 1 to 6 carbon atoms, an acrylic group or an alkyl acrylic group (1:58-67).

Regarding claim 39, the combination further discloses the solar cell module is free of EVA (see discussion above).

Response to Arguments

10. Applicant's arguments with respect to claims 2-4, 6, 8, 12-17, 31-34, 36 and 38-39 have been considered but they are not persuasive.

With respect to the "New Matter" rejection, Applicant argues that the previous filed argument dated 01/19/2010 cited numerous paragraphs in the specification that support the limitation and the burden shifted to the Examiner to explain why persons skilled in the art would not recognize in the disclosure a description of the invention defined by the claims (see Remarks, page 12).

The Examiner respectfully disagrees. The Examiner has carefully reviewed the entire the specification, along with the cited paragraphs, and could not find any relevant disclosure that teaches that "wherein said first and second liquid diorganopolysiloxanes, silicone resins, cross-linking agents, and hydrosilylation catalysts may be the same or different from each other, respectively", which is why the "New Matter" was set-forth in the Office Action dated 03/31/2010. Paragraphs [0046-0047], [0023] and 00026] of the specification does not even disclose whether "said first and second liquid diorganopolysiloxanes, silicone resins, cross-linking agents, and hydrosilylation catalysts may be the **same**."

With respect to 35 U.S.C. §112 ¶2 rejection, Applicant argues that the first and second cross-linking agents may be identical and yet may be used in differing molar amounts such that the Si-H and Si-C=C are different (Remarks, pages 12 and 13).

The Examiner respectfully disagrees. The claim recites the limitation "said first and second liquid diorganopolysiloxanes, silicone resins, cross-linking agents, and hydrosilylation catalysts may be the **same** or different from each other, respectively." If the first and the second liquid diorganopolysiloxanes are the same (as required by the claims) and if the first and second cross-linking agents are the same, then the ratio between number of moles of silicon-bonded hydrogen to the total number of moles of silicon-bonded alkenyl grous will not be satisfied, since silicone adhesive requires a ratio from 0.1:1 to 1:1, whereas the silicone encapsulant requires a ratio of > 1:1. Therefore, there is no instance where the ratio overlaps in order to make "said first and second liquid diorganopolysiloxanes, silicone resins, cross-linking agents, and hydrosilylation catalysts may be the **same**."

With respect to the prior-art rejection, applicant argues that the art teaches that EVA is particularly preferable and therefore teaches away from the use of silicone adhesive/encapsulant (See remarks page 14).

The examiner respectfully disagrees. Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or non-preferred embodiments (*In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971)) (MPEP §2123).

With respect to applicant's argument regarding unexpected results, it is noted that Stein explicitly teaches a silicone adhesive or encapsulant composition having improved adhesivity (1:22-33 and 2:23-33) and therefore "expected beneficial results are evidence of obviousness of a claimed invention, just as unexpected results are evidence of unobviousness thereof" (*In re Gershon*, 372 F.2d 535, 538, 152 USPQ 602, 604 (CCPA 1967)) (MPEP §716.02 (c) (II)).

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence/Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GOLAM MOWLA whose telephone number is (571) 270-5268. The examiner can normally be reached on M-Th, 0800-1830 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ALEXA NECKEL can be reached on (571) 272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/G. M./
Examiner, Art Unit 1723

/Alexa D. Neckel/
Supervisory Patent Examiner, Art Unit 1723